

PART 1 – THE SCHEDULE

SECTION C

DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

TABLE OF CONTENTS

C.1	OBJECTIVE	2
C.2	BACKGROUND	2
C.2.1	Storage and Disposition of Depleted Uranium	2
C.2.2	Site Information	3
C.3	TRANSITION OPERATIONS PHASE	4
C.4	CONVERSION OPERATIONS	6
C.5	PLANT MODIFICATIONS	9
C.6	PROJECT SUPPORT	9
C.6.1	Project Management	9
C.6.2	Waste Management	10
C.6.3	Conversion Product Management	13
C.6.4	Radiation Protection	13
C.6.5	National Environmental Policy Act (NEPA)	14
C.6.6	Regulatory Management	14
C.6.7	Integrated Safety Management	15
C.6.8	Safeguards & Security	17
C.6.9	Emergency Management	20
C.6.10	Quality Assurance Program	21
C.6.11	Engineering	23
C.6.12	Records Management	23
C.6.13	Property Management	28
C.6.14	Information Technology (IT) Infrastructure	33
C.6.15	Cybersecurity	33
C.6.16	Critical Interfaces and Integration	34
C.7	CYLINDER MANAGEMENT (FIRM FIXED PRICE)	34
C.7.1	General	34
C.7.2	PORTSMOUTH Cylinder Storage Yards Description	36
C.7.3	PADUCAH Cylinder Storage Yards Description	37
C.8	RELATED SERVICES	40

SECTION C

DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1 OBJECTIVE

The objective of this Contract is to operate the depleted uranium hexafluoride (DUF6) conversion facilities on DOE property at Paducah, Kentucky and Portsmouth, Ohio in order to convert DOE's inventory of depleted uranium hexafluoride (DUF6; now located at the Paducah Gaseous Diffusion Plant and the Portsmouth Gaseous Diffusion Plant) to a more stable uranium oxide form (UO_x). The inventory of DUF6 is approximately 765,000 metric tons (MT) for Portsmouth and Paducah combined. A second objective is to provide continuing cylinder surveillance and maintenance (S&M) services for the DOE inventory of DUF6, low-enrichment uranium (LEU) hexafluoride (UF_6), normal UF_6 , UO_x , and empty and heel cylinders in a safe and environmentally acceptable manner.

The activities within the scope of this PWS include:

- Provide S&M for the DUF6 conversion facilities and associated equipment.
- Operate the conversion facilities to convert the DUF6 from the inventory at Paducah and Portsmouth to uranium oxide.
- Reuse, store, and/or transport and dispose of the DUF6 conversion process end-products and wastes. Transport and disposition of oxide will be under a separate work statement.
- Sell the aqueous hydrofluoric acid (AqHF) product.
- Provide S&M services for the cylinder storage yards.

This work is to be performed in compliance with all applicable Federal, State, and local laws and regulations, Executive Orders, DOE Orders (and other types of Directives), Regulatory Permits, and Agreements and Orders (See Section J, Attachments J-1, J-2 and J-3) while achieving the aforementioned objectives.

C.2 BACKGROUND

C.2.1 Storage and Disposition of Depleted Uranium

- C.2.1.1 DOE has the programmatic responsibility for the Government's DUF6 inventory as the successor of the Atomic Energy Commission and the Energy Research and Development Administration. The chemical and physical characteristics of DUF6 pose potential health risks, and the material must be handled accordingly.
- C.2.1.2 Since the 1950s, DUF6 has been stored at Oak Ridge TN, Paducah KY, and Portsmouth OH in large steel cylinders. Cylinders formerly at Oak Ridge have been relocated to Portsmouth, where storage continues along with storage at Paducah. Most cylinders have a 12-metric-ton capacity and are 12 ft. long by 48 inches in diameter, with a steel wall thickness of 5/16 in. Similar but smaller

cylinders are also in use, and at Paducah there are several 19-ton (CV19) cylinders made of former UF6 gaseous diffusion conversion shells. During storage, a cylinder contains predominantly DUF6 in solid phase contact with DUF6 vapor at less than atmospheric pressure. The DUF6 cylinders managed by DOE at the two sites are typically stacked two cylinders high in the cylinder storage yards.

- C.2.1.3 Since 1990, DOE's cylinder management has focused on the ongoing S&M of the cylinders containing DUF6. Public Law (P.L.) 105-204, signed by the President in July 1998, directed the Secretary of Energy to prepare and submit to Congress a plan to ensure that all funds accrued on the books of the United States Enrichment Corporation (USEC) for the disposition of DUF6 will be used for the construction and operation of plants to treat and recycle DUF6 consistent with the National Environmental Policy Act (NEPA). In July 2002, Congress passed additional legislation in P.L. 107-206 that reiterated the intent to build two facilities, one at Paducah and one at Portsmouth. The legislation also called for the transportation of cylinders containing DUF6 from Oak Ridge to Portsmouth for conversion, required DOE to award a contract for the project within a month of the President's signature, and moved the construction start date to July 31, 2004. Any conversion plants that resulted from this procurement would convert the DUF6 to a more stable chemical form that would be suitable for either beneficial use or disposal.
- C.2.1.4 DOE announced availability of a draft Request for Proposals (RFP) on July 30, 1999, for a contractor to design, construct, and operate the DUF6 conversion facilities at the Paducah and Portsmouth uranium enrichment plant sites. On October 31, 2000, DOE issued a final RFP to procure a contractor to design, construct, and operate DUF6 conversion facilities at the Paducah and Portsmouth plant sites. In August 2002, DOE signed Contract No. DE-AC-05-02OR22717 with Uranium Disposition Services, LLC (UDS) for the DUF6 Conversion Project. The UDS contract ran from August 2002 through March 2011. The UDS contract included design, construction and initial operation of the project facilities. In May 2008, the Portsmouth plant reached the Physical Construction Complete milestone and in December 2008 the Paducah plant reached the Physical Construction Complete milestone. In May 2010, DOE gave its approval to the Portsmouth plant to commence hot functional testing after extensive system testing and operational readiness reviews. The Paducah plant obtained similar approval in September 2010. The plants have converted over 40,000 metric tons of DUF6 through FY 2014.

C.2.2 Site Information

The Paducah Gaseous Diffusion Plant is located in western McCracken County, 15 miles west of Paducah, Kentucky, between U.S. Highway 60 and the Ohio River and consists of approximately 115 buildings and structures. A single rail system serves the site with a spur that accesses both the oxide and AqHF load-out areas. Facilities utilized for the gaseous diffusion enrichment operations have been placed in stand-by, or are undergoing the process of deactivation and dismantlement (D&D). The Portsmouth Gaseous

Diffusion Plant is located 23 miles north of Portsmouth near Piketon, Ohio, on U.S. Highway 23. A single rail system serves the site. Facilities required for the gaseous diffusion operations have been placed in stand-by, or are undergoing the process of D&D. Contractor management and project support activities are also located at Lexington, KY near the DOE Portsmouth Paducah Project Office (PPPO).

C.3 TRANSITION OPERATIONS PHASE (WBS element: TRAN)

- C.3.1 After receiving a written Notice to Proceed (NTP) from the DOE Contracting Officer (CO), the Contractor shall begin transition operations activities in accordance with the terms of the Contract. The Transition Operations Phase shall be completed within 90 days of receipt of the NTP, and at its conclusion, the Contractor shall assume full responsibility for the conversion facilities operation and cylinder S&M. During completion of the Transition Operations Phase, the Incumbent Contractor shall continue Operations.
- C.3.2 The Contractor shall implement the approved **Transition Operations Plan (TOP)**, submitted with the Contractor's proposal, which will guide the first phase of Contract activities. The Plan shall cover the Transition Operations Phase, which shall occur within the 90-day period after the CO issues the NTP. Completion of the Transition Operations Phase shall result in transition of operational responsibility for the conversion facility and cylinder S&M from the Babcock and Wilcox Conversion Services (BWCS) Incumbent Contractor to the Contractor.
- C.3.3 The CO will include in the NTP that the TOP has been approved and designated as revision 0. The Contractor shall manage the first 90 days following the CO's NTP according to the approved TOP and any additional guidance from the CO. Refer to Attachment J-8, List of Deliverables for detailed instructions, requirements, and schedule for the submission of reports, plans, and other required documents during the Transition Operations Phase.
- C.3.4 The Transition Operations Phase shall include the following activities, which shall be described in the **Transition Operations Plan**. In addition, a schedule of these activities shall be included within the **Transition Operations Plan** for this 90-day Transition Operations Phase.
 - C.3.4.1 Description of a communication process among DOE, the Incumbent Contractor, Incumbent Contractor's subcontractors, Contractor employees, and other contractors or tenants at Lexington, and at the Portsmouth and Paducah sites;
 - C.3.4.2 Identification of all transition issues and milestones, including transition of the cylinder S&M responsibilities;
 - C.3.4.3 Identification of a Contractor transition team (inclusive of consultants and teaming partners);
 - C.3.4.4 Identification and transfer as appropriate of work and planning packages (direct and indirect) and budgets for Incumbent Contractor's subcontractors;

- C.3.4.5 Implementation of human resource management consistent with Workforce Transition and Contractor Human Resources Management requirements as described in Section H, Clauses H.3 through H.11;
- C.3.4.6 Implementation of existing or proposed management and operating systems (e.g., project management, Integrated Safety Management, operating procedures, electronic data processing, budget and planning, accounting, purchasing, compensation, labor/payroll, indirect and direct costs, property management, billing and estimating);
- C.3.4.7 Assumption of all Environmental, Safety and Health (ES&H) responsibilities, functions, and activities;
- C.3.4.8 Development of all interface control documents;
- C.3.4.9 Assumption of permits, applications, licenses, and other regulatory documents (see Attachment J-3);
- C.3.4.10 Performance of physical walk-downs of the facilities and equipment with the Incumbent Contractor;
- C.3.4.11 Review of as-built drawings and technical specifications with the Incumbent Contractor; review all open issues in the Issues Management System (see C.6.10.3) with the Incumbent Contractor; and review all Plant Systems and their operations, all open and planned equipment modifications, and all work and planning packages with the Incumbent Contractor, including management from Operations, Maintenance, and Engineering;
- C.3.4.12 Assumption of Authorization Basis documents and Documented Safety Analysis process;
- C.3.4.13 Development of a schedule and milestones for finalization of required deliverables as described in Attachment J-8 List of Deliverables.
- C.3.4.14 Development of written programs, policies, procedures, and plans associated with facility operations, including cylinder S&M. Documents developed by the Incumbent Contractor will be made available to the Contractor, which the Contractor is encouraged to evaluate and revise for its use.
- C.3.4.15 Within 60 days of NTP, the Contractor shall review the existing **Cylinder Surveillance and Maintenance Plan (see Attachment J-8, List of Deliverables)** and revise this Plan, if necessary, to effectively integrate cylinder S&M with conversion facility operations and cylinder yard activities. Any revisions shall be submitted to the CO for approval, and must be approved by the CO prior to the Contractor's performing cylinder S&M after the Transition Operations Phase.

- C.3.4.16 Within 60 days of NTP, the Contractor shall review the existing **Conversion Facilities Operations and Maintenance Plan (see Attachment J-8, List of Deliverables)**, and revise this Plan if necessary. This summary Plan shall address activities including conversion operations, cylinder sequencing, staffing, staff training, shift operations including facility maintenance, and development of procedures and policies for equipment inspection and maintenance, and parts replacement and spares. Any revisions shall be submitted to the CO for approval, and must be approved by the CO prior to implementation..

The Plan shall also address how the Contractor will manage a curtailment or suspension of plant operations caused by unforeseen events. The Contractor shall consider the cost benefit trade-off between continuing operations and temporary shutdown; the Plan shall consider the potential damage to equipment, the potential health, safety or environmental hazards or risks, and the potential impact to the operations personnel.

- C.3.4.17 Within 30 days of NTP, the Contractor shall prepare and submit for CO approval the **Readiness Assessment (RA) Plan (see Attachment J-8, List of Deliverables)** to demonstrate that all activities of the Transition Operations Phase will be completed by the Contractor such that conversion facility operations and cylinder S&M are adequately transitioned from the Incumbent Contractor. The Contractor shall complete the RA and submit the **RA Report (see Attachment J-8, List of Deliverables)** to the CO for approval at least 15 business days prior to completion of the Transition Operations Phase.

C.3.5 The Contractor shall:

- C.3.5.1 After the Contractor completes the Transition Operations Phase activities in accordance with the approved TOP, including any other activities as may be authorized or directed by the CO, the Contractor shall notify the CO in writing that it is ready to assume full responsibility for conversion facility operations and cylinder S&M (**see Attachment J-8, List of Deliverables**).

- C.3.5.2 Upon written approval from the CO, the Contractor shall assume full responsibility for conversion facility operations and cylinder S&M, and shall proceed to Conversion Operations on the date of approval specified in writing by the CO.

C.4 CONVERSION OPERATIONS

- C.4.1 The Contractor shall convert DUF6 to UO_x in a safe manner. The following table provides the design capacity of each plant, per the system design description, as well as actual DUF6 conversion in FY 2014:

Site	Plant Design Capacity	FY 2014 Actual DUF6 Converted
Portsmouth Gaseous Diffusion Plant	13,500 MT/yr.	9,976 MT
Paducah Gaseous Diffusion Plant	18,000 MT/yr.	12,620 MT

(WBS elements PA/PO1000)

- C.4.2 The Contractor shall safely process DUF6 cylinders identified in the Cylinder Information Database (CID). The Contractor shall only process lower assay cylinders with less than or equal to 0.25% uranium-235. Cylinders greater than 0.25% uranium-235 shall only be processed upon approval of the CO, based upon the approved **Conversion Facilities Operations and Maintenance Plan (see Attachment J-8, List of Deliverables)**. (WBS elements PA/PO1000)
- C.4.3 The Contractor shall safely process and disposition DUF6 cylinders according to C.4.2 above, irrespective of size, shape, or condition. The Contractor shall process both good and degraded cylinders in a systematic manner and shall not arbitrarily set aside degraded cylinders. Cylinders which are corroded, dented, breached, or otherwise present a greater hazard in storage shall not be excluded from conversion operations and must be converted according to the approved **Conversion Facilities Operations and Maintenance Plan (see Attachment J-8, List of Deliverables)** per C.4.2. An annual schedule for processing good and degraded cylinders shall be submitted to the CO for review/approval by October 1 of each Fiscal Year and at the conclusion of the TOP. (WBS element PA/PO1000)
- C.4.4 The Contractor shall operate and maintain the conversion facilities in accordance with DOE Order 422.1 "Conduct of Operations," requirements of the Section I clause entitled "DEAR 970.5204-2 Laws, Regulations, and DOE Directives"; and applicable permits and licenses to convert DUF6 inventory to the chemically stable form. (WBS elements PA/PO1000, 1300)
- C.4.5 The Contractor shall be responsible for any pre-conversion confirmation of cylinder contents and conditions necessary to establish that the DUF6 feed to the conversion facility will meet the design basis criteria for DUF6 feed as defined in the System Requirements Document. The Contractor also shall be responsible for any characterizations necessary to support applications for and approvals of required operating permits; to ensure subsequent compliance with environmental regulations and the requirements of these permits; to demonstrate compliance with occupational health and safety ordinances; and to quantify, classify, and certify co-products, wastes, effluents, and emissions from the conversion facility. (WBS elements PA/PO1000)
- C.4.6 The Contractor shall be responsible for the safe, compliant storage of the cylinders and products/wastes until these cylinders, co-products, or wastes are transported off-site and dispositioned (either by acceptance for disposal by a licensed waste disposal site or

transfer of title to another entity for use/reuse). The Contractor shall provide the capability to safely store the empty cylinders and products/wastes generated from conversion. AqHF must be continually dispositioned. The method of storage of each of these materials shall be considered in the NEPA and safety analyses. The Contractor shall store radiological waste materials in accordance with DOE Order 435.1 "Radioactive Waste Management" as required by the Section I clause entitled "DEAR 970.5204-2 Laws, Regulations, and DOE Directives." Storage and packaging of reactive products must conform, as appropriate, to federal, state, and local regulations for chemical hazards. (WBS elements PA/PO1000)

- C.4.7 The Contractor shall retrieve cylinders from the yards and transport them to the conversion facility, per the requirements of Section C.7, Cylinder Management. (WBS elements PA/PO1000)
- C.4.8 The Contractor shall be responsible for the sale of AqHF product as a sales agent for the Government, according to the requirements of Section H.1, Sales of Conversion Products and Excess Uranium Inventory. The Contractor shall not engage in the sale of other conversion products unless directed by the CO. (WBS elements PA/PO1000)
- C.4.9 All waste shall be processed, packaged, and certified to meet the waste acceptance criteria (WAC) at the federal disposal facility or at another licensed low-level waste (LLW) repository. If the federal disposal facility is chosen by the Department for all or a portion of the material, the Contractor shall transport the material to that site and transfer the material, certified for disposal, to the operating contractor of the federal disposal facility. If another licensed LLW repository is chosen for all or a portion of the material, the Contractor shall be responsible for disposition actions. Disposal of wastes shall be performed in accordance with applicable local, state, and federal regulations. (WBS elements PA/PO1000)
- C.4.10 Transuranic (TRU) wastes (as defined in DOE Order 435.1) are not anticipated to be generated from conversion operations; however, TRU wastes may be found in the remaining, non-volatile heels of some emptied cylinders. The existence of residual TRU wastes in empty cylinders does not preclude their refilling with UO_x , so long as the filled cylinders meet all requirements for transportation and disposition. Damaged or otherwise unsuitable cylinders shall not be filled with UO_x . A nearly empty cylinder with a TRU heel may result in an overall TRU concentration of greater than 100 nCi/g, which may need to be treated as TRU waste as defined by DOE O 435.1. (WBS elements PA/PO1000)
- C.4.11 As-built drawings of all DUF6 project facilities shall be maintained current throughout the term of this Contract. Status of the as-built drawings shall be annually sent to the CO by October 1 of each Fiscal Year (see **Attachment J-8, List of Deliverables**). (WBS elements PA/PO3000)
- C.4.12 The Contractor shall carry out all maintenance activities for DUF6 conversion facilities, cylinder yards and associated equipment in accordance with applicable DOE Orders, including 433.1 "Maintenance Management Program for DOE Nuclear Facilities", on the DUF6 conversion facility, equipment, support systems, designated railroads, and

vehicles. The maintenance work scope shall include periodic evaluation and revision to the controlling surveillance and maintenance plans, descriptions, and procedures. The Contractor shall manage and provide the surveillance and maintenance services required to maintain reliability and availability of the DUF6 conversion facilities, equipment and systems, and cylinder yards (including maintenance of the cylinders themselves, and any emergency response). The Contractor shall schedule planned outages and manage all outages so as to maximize safety, efficiency and cost effectiveness while minimizing down time. The Contractor shall propose the content of a periodic Maintenance Activity Services Report for the DOE CO (see Attachment J-8, List of Deliverables) describing expected maintenance work in order to assess the level of Maintenance support needed for long term facility operations. Once agreement is reached on the content and periodicity of this report and any adjustments to the Contract value, the Contractor shall provide the report as agreed to by the DOE CO. (WBS elements PA/PO1000, 1300)

- C.4.13 The Contractor shall provide all necessary non-labor items and services needed to execute the cylinder management activities in Section C.7. Such items and services may include, but are not limited to equipment, supplies, materials and subcontracts. (WBS elements PA/PO1000)

C.5 PLANT MODIFICATIONS

Modifications to the DUF6 conversion plants may be necessary or desirable to maintain or improve reliability, safety, production rates, or overall efficiency. Potential modifications may be identified by either the Contractor or DOE. DOE has provided estimated annual budget for each site (see L.28), which is part of the basic scope of work. The baseline will describe known modifications and provide budget for planning packages and will document the agreed upon planned modifications. DOE CO may require a detailed submittal or proposal for some modifications based on complexity and cost of the modification. Modifications beyond those agreed to in the baseline list may also be necessary. For these, a proposal shall be requested by the DOE CO detailing the scope of the modification, estimated cost, schedule, and potential benefits. (WBS elements PA/PO 1300)

C.6 PROJECT SUPPORT

Upon receiving a written NTP from the CO, the Contractor shall ensure effective performance of activities necessary to safely operate the conversion facilities and carry out the cylinder management activities. The following paragraphs of this Section define the Department's requirements to manage the conversion operations as a DOE project, and in accordance with all applicable DOE programmatic requirements (e.g., safety, regulatory compliance, security, quality assurance, records management). For the interface with other DOE site contractors see Section J, Attachment J-4 "DUF6 Services & Contract Interface Requirements Matrix."

C.6.1 Project Management (WBS element LX1000)

- C.6.1.1 The Contractor shall prepare and submit for DOE approval the **Project Management Plan** (see Attachment J-8, List of Deliverables) that describes the Contractor's project management system. The Contractor shall execute the Plan upon DOE approval. The Plan shall address the

contractor's approach to performance measurement, work control and reporting, consistent with Section H.66 "Integrated Contractor Work Control Systems and Reporting Requirements (July 2012).

- C.6.1.2 The Contractor shall assist in the performance of all applicable project reviews that may include, but are not limited to, Independent Project Reviews (IPRs); quarterly project reviews; safety, security, and quality assurance assessments; and periodic reviews of project performance.

C.6.2 Waste Management

- C.6.2.1 The Contractor is responsible for and shall perform activities related to waste management, which include waste generation, packaging and transportation (per requirements in DOE O 460.1C and DOE O 460.2A), storage, treatment, sampling and analysis, waste minimization, waste certification, and disposal associated with DUF6 processing and related operations. Within 60 days of NTP, the Contractor shall review, revise as necessary and submit any revisions for CO approval the **Waste Management Plan (see Attachment J-8, List of Deliverables)**. This Plan shall be implemented upon assumption of full responsibility for conversion facility operations. This Plan shall describe how each identified waste is generated and how it is to be managed from the point of generation to disposal. The Plan shall include the quantities, methods, and timetables for the management of each waste stream. The Contractor shall revise the Plan as needed, whenever changes are made that affect waste management. Changes to the Plan shall be subject to CO approval. The Contractor shall notify the CO if no revisions to the Plan are needed. (WBS elements PA/PO2200)

- C.6.2.2 The DOE is responsible for ensuring that a waste disposition pathway exists for radioactive waste and/or the radiological component of any mixed wastes. Disposition pathways may include a DOE-owned and operated site or a privately-owned and operated site. The Contractor shall assist the DOE in identifying disposition pathways and in preparing documentation necessary to demonstrate each waste stream's compliance with the receiver site's waste acceptance criteria (WAC). The Contractor shall also assist DOE with preparation of additional documentation (e.g., certification program descriptions, briefing slides, etc. for interactions with DOE and/or U.S. Environmental Protection Agency (EPA) officials, state governments, members of the public, and/or representatives from the candidate waste disposal sites.) (WBS elements PA/PO2200)

- C.6.2.3 Waste Disposition Requirements

The Contractor shall store, characterize, process, package, transport, and dispose of waste in accordance with applicable laws, regulations, and DOE directives referenced herein. The types of waste include, but are not limited to: low-level waste (LLW), mixed low-level waste (MLLW), industrial waste,

sanitary waste, and hazardous waste. Waste is considered disposed of when it has been shipped to, and accepted for final disposition at, a properly licensed and permitted disposal site. The Contractor shall avoid generating waste with no pathway for disposal.

For LLW and/or MLLW resulting from conversion operations, the Contractor shall:

1. Manage and dispose of waste in accordance with the Contractor Requirements Document (Attachment 1) of DOE Order 435.1.
2. Establish and maintain an approved waste acceptance certification program, in accordance with disposal site requirements.
3. Prepare exemption requests in accordance with DOE Order 435.1 and associated DOE manuals and guides referenced herein for use of commercial disposal facilities, if commercial disposal options are being pursued.
4. Prepare waste profiles as required and obtain disposal site approval.
5. Ensure the final waste form is compliant with the disposal site WAC, applicable site permits and licenses and Resource Conservation and Recovery Act (RCRA) Land Disposal Restrictions (LDR).
6. Prepare required procedures, work plans, and waste shipping forecasts for processing and disposing of waste.
7. Process and treat the waste as required to meet disposal site WAC and LDR, as applicable.
8. Utilize disposal-site approved disposal containers for the waste.
9. Coordinate with the disposal sites and be the shipper of record for waste being shipped to disposal sites.
10. Prepare the waste for transport to the disposal facility.
11. Ship the waste from the conversion facility to the proposed waste disposal site.
12. Safely and compliantly store waste that is awaiting disposal.

Operation of the conversion facilities and storage of the waste shall not be constrained by uncertainty associated with the selection of the disposal sites.

For hazardous and industrial waste, the contractor shall:

1. Prepare waste profiles as required and obtain disposal site approval.
2. Obtain final waste form certification from disposal sites.
3. Prepare all required procedures, work plans, etc., for processing hazardous and industrial waste.

4. Process and treat the waste as required to meet disposal site WAC and RCRA LDR, as applicable.
5. Procure disposal site approved disposal containers for the hazardous and industrial waste.
6. Coordinate with the disposal sites and be the shipper of record for hazardous and industrial waste being shipped to disposal sites.
7. Prepare the hazardous and industrial waste for transport to the disposal facility.
8. Safely and compliantly store hazardous and industrial waste that is awaiting disposal.
9. Load and ship hazardous and industrial waste for disposal. (WBS elements PA/PO2200, 3000)

C.6.2.4 Waste Interfaces

The Contractor shall maintain liaison with the following:

1. DOE and contractors at federal and/or commercial LLW/MLLW disposal facilities. Activities include:
 - a. Implementation of DOE Order 435.1.
 - b. Maintenance of the DUF6 project Waste Certification Program.
 - c. Development of waste disposal profiles for LLW and MLLW.
 - d. Characterization and certification of LLW and MLLW.
 - e. Shipment and disposal of LLW and MLLW.
 - f. Support with preparation of documentation for meetings with DOE and US EPA officials, State governments, members of the public, and/or representatives from the waste disposal sites.
2. Other DOE sites. Activities include:
 - a. Consultation support for other DOE waste generators to ensure proper waste preparation and demonstration activities.
 - b. Integration activities as necessary for transfer of waste, samples, etc. to or from other sites.
 - c. DOE Office of Disposal Operations integration activities, e.g., annual waste forecasts, bi-weekly LLW/MLLW conference calls, and lessons learned.
 - d. DOE's Office of Health, Safety and Security, and the Office of Disposal Operations regarding the preparation of commercial exemptions, as appropriate, in accordance with DOE Order 435.1 and implementing documents.

(WBS elements PA/PO2200)

C.6.2.5 Waste Disposition Alternatives

As directed by DOE, the Contractor shall perform value engineering and cost benefit studies to evaluate alternate packaging and loading, to reduce the cost of waste disposition. (WBS elements PA/PO2200)

C.6.3 Conversion Product Management

The Contractor shall review, revise as needed, submit any revisions for CO approval, and (once approved) execute the **Conversion Product Management Plan (see Attachment J-8, List of Deliverables)**, within 60 days of NTP. This Plan shall describe how each identified product is generated and how it is to be managed from the point of generation to disposition. The Plan shall include the quantities, methods, and timetables for the management of each product stream. The Plan shall be maintained and revised whenever changes are made that affect product management. Changes to the Plan shall be subject to CO approval. The Contractor shall notify the CO if no revisions to the Plan are needed. The Contractor shall be responsible for the sale of AqHF and disposition of any other conversion product, if specifically directed by the DOE per Section H, clause entitled “Sales of Conversion Products and Excess Uranium Inventory.” The Contractor shall ensure that the product presented for sale meets the DOE-authorized unrestricted use limit of radioactive material contained therein. The Contractor shall review the Plan annually, and submit any needed revisions for CO approval. (WBS elements PA/PO2200)

C.6.4 Radiation Protection (WBS element LX1300, PA/PO3000)

The Contractor shall be fully responsible for radiation protection of workers, the public and the environment, and shall review, revise as necessary and submit any revisions for DOE approval, and (once approved) execute an approved **Radiation Protection Program (RPP) (see Attachment J-8, List of Deliverables)]** in accordance with 10 CFR 835 “Occupational Radiation Protection” and DOE Order 458.1, “Radiation Protection of the Public and the Environment”. The Contractor shall submit the RPP to the CO for review and approval within 60 days of NTP. In addition, if significant changes are proposed to the RPP, the Contractor shall submit the proposed changes to the CO for review and approval at least 90 days prior to implementing the changes. Following initial approval of the RPP, the Contractor shall update the RPP on an annual basis and as otherwise needed, and submit any updates for CO approval.

The Contractor shall establish and implement an Environmental Radiological Protection Program (ERPP) (see Attachment J-8, List of Deliverables) to protect the public and environment against undue risk from radiation associated with its radiological activities. The program shall meet the requirements of DOE O 458.1, “Radiation Protection of the Public and the Environment,” and ensure specified public dose limits are not exceeded. The Contractor shall submit the ERPP to the CO for review and approval within 60 days of NTP. In addition, if significant changes are proposed to the ERPP, the Contractor shall submit the proposed changes to the CO for review and

approval at least 90 days prior to implementing the changes. Following initial approval of the ERPP, the Contractor shall update the ERPP on an annual basis and as otherwise needed, and submit any updates for CO approval.

C.6.5 National Environmental Policy Act (NEPA) (WBS element LX1300)

- C.6.5.1 The Contractor shall be responsible for preparation of additional NEPA documentation required to complete the scope of work. The Contractor shall advise DOE of the requirement to prepare additional NEPA documentation, shall provide DOE with draft NEPA documentation for review and comment, and shall incorporate DOE comments in the final NEPA document. The Contractor shall reproduce and distribute the appropriate number of final NEPA documents, as requested by the DOE. NEPA documents shall be prepared in accordance with 40 CFR 1500-1508, the Department's implementing regulations for NEPA found at 10 CFR 1021, and DOE O 451.1B "National Environmental Policy Act Compliance Program."
- C.6.5.2 The Contractor shall support the NEPA compliance activities of the DOE. The support will include, as examples, responding to questions from the NEPA compliance team, upon DOE request sending one or more subject matter experts to support the DOE at public meetings, and providing updated data to the NEPA team at specified intervals. The NEPA team may include federal personnel as well as non-federal personnel affiliated with contract vehicles separate from this Contract.

C.6.6 Regulatory Management (WBS element LX1300; PA/PO3000)

- C.6.6.1 The Contractor shall be responsible for permits, applications, licenses, and other regulatory documents required by the Contract (See Section H and Section I). The Contractor shall review, revise as necessary, and submit revisions for CO approval, the **Regulatory and Permitting Management Plan (see Attachment J-8, List of Deliverables)**. The Contractor shall execute revisions to the Plan upon CO approval. The Contractor shall notify the CO if no revisions to the Plan are needed. This Plan shall describe the strategy for ensuring that the conversion facilities are operated in accordance with applicable requirements as required by the Section I clause entitled "DEAR 970.5204-2 Laws, Regulations, and DOE Directives." The Plan shall include a schedule of regulatory and permitting actions. The schedule shall identify major milestones and critical actions necessary to ensure that licenses and permits have been obtained. The Contractor shall review the Plan annually, revise as necessary, and submit revisions to DOE for approval prior to implementation.
- C.6.6.2 The Contractor shall incorporate the following requirements, at a minimum in the **Regulatory and Permitting Management Plan (see Attachment J-8, List of Deliverables)** and shall comply with the requirements and all amendments:

- C.6.6.2.1 The agreement, dated February 24, 1998, entitled “Ohio EPA Director’s Final Findings and Orders” (DFF&O) as amended on June 24, 2005, February 21, 2008, March 28, 2011 and October 1, 2013 (See Section J, Attachment J-3).
- C.6.6.2.2 The letter, “To William Murphie, PPPO, from Margaret M. Guerriero, Director, Waste, Pesticides and Toxics, US EPA, TSCA Approval for Storage for Disposal of PCB Bulk Product (Mixed) Waste (paint with 50 ppm or greater PCBs on cylinders containing radioactive material) U.S. DOE Portsmouth Gaseous Diffusion Plant, Portsmouth, OH, June 1, 2005” (See Section J, Attachment J-3).
- C.6.6.2.3 The Commonwealth of Kentucky Natural Resources and Environmental Protection Cabinet Agreed Order, October 3, 2003. (See Section J, Attachment J-3.)
- C.6.6.3 At the request of DOE, the Contractor shall negotiate in good faith and become a party and signatory to such future regulatory agreements or orders, as DOE may deem appropriate for the work performed pursuant to this Contract.

C.6.7 Integrated Safety Management (WBS Elements LX1300, PA/PO3000)

- C.6.7.1 Protection of workers, the public, and the environment are fundamental responsibilities of the Contractor and a critically important performance expectation. The Contractor’s ES&H program shall be operated as an integral and visible part of how the organization conducts business. A key element will be to implement DOE Policy 450.4A, “Integrated Safety Management Policy,” which includes prioritizing work planning and execution, establishing clear ES&H priorities, and allocating the appropriate level of trained and qualified resources to address programmatic and operational considerations. The Contractor shall ensure that cost reduction and efficiency efforts are fully compatible with ES&H performance.
- C.6.7.2 The Contractor shall, within 60 days of NTP, review, revise as necessary, submit any revisions for CO approval, and (once approved) execute the approved **Integrated Safety Management System (ISMS) Plan (see Attachment J-8, List of Deliverables)**. The Contractor shall provide updates to this Plan, as needed, and submit to the CO for approval. The Contractor shall notify the CO if no revisions to the Plan are needed. The Plan shall be prepared in accordance with the Section I clause entitled “DEAR 952.223-71 Integration of Environment, Safety, and Health into Work Planning and Execution.” Documentation of the Plan shall describe how the Contractor will (1) define the scope of work; (2) identify and analyze hazards associated with the work; (3) develop and implement hazard controls; (4) perform work within controls; and (5) provide feedback on the adequacy of controls and

continue to improve safety management. The Contractor shall manage and perform work in accordance with this Plan.

- C.6.7.3 The Contractor shall perform activities in compliance with applicable health, safety, and environmental laws, orders, regulations, and national consensus standards; and governing agreements, permits, and orders executed with regulatory and oversight government organizations. The Contractor shall take necessary actions to preclude serious injuries and/or fatalities, keep worker exposures and environmental releases as low as reasonably achievable below established limits, minimize the generation of waste, and maintain or increase protection to the environment, the public, and worker safety and health.
- C.6.7.4 Incorporating integrated line management, the Contractor shall put in place a system that clearly communicates the roles, responsibilities, and authorities of line managers. The Contractor shall hold line managers individually accountable for implementing necessary controls for safe performance of work in their respective areas of responsibility. The Contractor shall establish effective management systems to identify deficiencies, resolve them in a timely manner, ensure that corrective actions are implemented (addressing the extent of conditions, root causes, and measures to prevent recurrence), and prioritize and track commitments and actions. The Contractor shall evaluate ES&H performance in selection of its subcontractors and incorporate ES&H requirements into subcontracts.
- C.6.7.5 The Contractor shall review, revise as necessary, , submit any revisions for CO approval, and (once approved) execute the approved **Worker Safety and Health Program (WSHP) (see Attachment J-8, List of Deliverables)** compliant with requirements appearing in 10 CFR 851. The Contractor shall notify the CO if no revisions to the Plan are needed. The Contractor shall ensure that its WSHP addresses and encompasses all of the work to be performed under this Contract. The WSHP shall also be applicable to the Contractor's subcontractors performing work. The Contractor shall ensure that all subcontractors performing work comply with the WSHP. Annually, the Contractor shall submit either an updated WSHP to the CO for approval or a letter stating that no changes are necessary in the currently approved WSHP.
- C.6.7.6 The Contractor shall report occupational safety & health information as required in Attachment 3 to DOE O 231.1B, Environment, Safety and Health Reporting, including but not limited to, electronic submission of injury and illness reports using the Computerized Accident/Incident Reporting System (CAIRS).
- C.6.7.7 During the Transition Operations Phase, the Contractor shall review and adopt the existing **Documented Safety Analyses (DSAs) and Technical Safety Requirements (TSRs) (see Attachment J-8, List of Deliverables)**. The Contractor shall operate the facilities in accordance with the DOE approved DSAs and TSRs. The Contractor shall provide annual updates to these documents as required by 10 CFR 830.204 and 205. The DSA updates for the

Portsmouth and Paducah sites shall evaluate hazards, including nuclear, chemical, and natural phenomena hazards, and shall assess the impact of these events on the safe operation of the conversion facilities.

C.6.7.8 Safety-Significant Systems, Structures, and Components (SS SSCs) shall comply with appropriate codes and standards identified in DOE Guide 420.1, March 2000. The following components have been identified as safety-significant based on the hazard analyses and are documented in the current DSAs. Refer to the latest DOE approved DSAs for Portsmouth and Paducah.

- Autoclave containment boundary
- Autoclave isolation valves
- DUF6 piping pressure boundary
- UF6/ UO₂F₂ detectors
- Hydrogen detectors
- Conversion Building hydrogen isolation valve
- Hydrogen piping pressure boundary
- HF receiver tanks
- HF receiver tank isolation valves
- HF vapor detectors
- HF storage tanks
- HF storage tank isolation valves
- Secondary HF liquid confinement
- Aqueous HF piping pressure boundary
- Off-gas piping pressure boundary
- Vehicle barriers
- Independent Safety System
- Conversion Unit
- Cylinder Evacuation Room (CER) cylinder temperature element
- Conversion Building
- Standard DUF6 feed cylinder
- Cylinder Transfer System CER DUF6 header isolation valve
- Grading and curbing
- Fire suppression system

C.6.8 Safeguards & Security (S&S) (WBS elements PA/PO3000)

C.6.8.1 The Contractor shall perform S&S functions for DOE DUF6 Conversion Project Operational Site Security oversight/operations at the Portsmouth & Paducah Sites in accordance with applicable Federal Laws, Executive Orders, Departmental Directives (Section J, Attachment J-1, List A and Attachment J-2, List B). The Contractor shall coordinate with the appropriate Portsmouth or Paducah Officially Designated Security Authority (ODSA), which is responsible for administering the S&S Program for all DOE personnel, prime

contractors and others having official business on the respective Portsmouth and Paducah Sites. PPPO is the Officially Designated Federal Security Authority (ODFSA) for both sites. The Portsmouth and Paducah ODSAs provide Safeguards oversight of the Nuclear Materials Controls and Accountability (MC&A). The ODSAs at Portsmouth and Paducah are responsible for evaluating the DUF6 Conversion Project Operational Site Security Plans for concurrence with established site security process.

The Contractor shall develop, document, implement, and submit for DOE approval the following two deliverables: 1.) **The Paducah DUF6 Conversion Project Operational Site Security Plan (SSP) (see Attachment J-8, List of Deliverables)** and 2.) **The Portsmouth DUF6 Conversion Project Operational Site Security Plan (SPP) (see Attachment J-8, List of Deliverables)**. The respective plans shall be included as an addendum to the ODSA SSP for each site. The ODSA will review the DUF6 Conversion Project Operational SSP, and verify that the DUF6 Conversion Project Operational SSP is consistent with the ODSA SSP, site security procedures, and all applicable DOE Directives referenced herein.

The Contractor shall conduct S&S activities, as approved by the ODFSA, to ensure that the assumptions and approved operating conditions are necessary and sufficient to protect national security and property assets, as well as the public, DOE employees, and Contractor employees at both sites from malevolent actions by adversaries. The Contractor shall coordinate with the appropriate ODSA to prepare, revise and execute the DUF6 Conversion Project Operational Site portion of the SSP for the Portsmouth and Paducah Sites. The Contractor shall prepare timely updates to the SSPs, as required, and shall provide the updates to the ODSA. The SSPs shall at a minimum be updated annually and/or when significant changes occur. The SSPs shall be a compendium of plans for meeting the DOE S&S requirements. The Contractor's portion of the SSP shall at a minimum include the methodology for the physical protection of the conversion facilities, Information Security, MC&A, and Personnel Security and shall detail the S&S protection strategy for DOE assets at the DUF6 Conversion Projects at Paducah and Portsmouth.

The SSP is the approved method for conducting security operations at a facility or site. The SSP must reflect security operations at the Portsmouth and Paducah DUF6 Conversion Projects at all times. The SSP must describe in detail, either in its content or in combination with other explicitly referenced documents, all aspects of S&S operations occurring at the location and must include documentation of any deviations from national or DOE requirements. The SSP must be based on in-depth analysis of considerations specific to the location and the assets and interests to be protected.

The Contractor shall ensure that the SSP is supported by a sufficient analytical basis to establish that protection requirements will be met if the SSP is completely and effectively executed. The analytical basis shall include, as applicable, qualitative and quantitative simulations, performance test results,

and/or expert analysis that reflect the complexity of facility/site operations and the consequences of loss or unauthorized access or use of the security assets present.

The DUF6 Conversion Project Operational Site portion of the SSP shall include protection of Export Controlled Information (ECI) in accordance with 15 CFR 730-774, Export Administration Regulations (EAR) and Unclassified Controlled Nuclear Information (UCNI) in accordance with the requirements of 10 CFR 1017, Identification and Protection of Unclassified Controlled Nuclear Information. The SSP shall also include a sabotage vulnerability assessment covering aspects of facility operation, which might have an unacceptable impact on personnel, the public, or the environment. The SSP shall be coordinated with other onsite activities, including Emergency Management (DOE O 151.1C, Comprehensive Emergency Management System), to ensure adequate protection of the conversion facilities and uranium-bearing materials. The ODFSA shall approve the SSP and any updates thereafter.

C.6.8.2 Access Authorizations. The scope of the DUF6 Conversion Project operations will require a limited number of individuals to have unescorted access to Limited Areas (LA) at both the Portsmouth and Paducah sites. This access will require the Contractor (and any tier parents, if applicable) to have a Non-Possessing Facility Clearance (FCL) at the L level for access to National Security Information (NSI) and Confidential Restricted Data (CRD). The FCL must be in place prior to Contract award.

Following the favorable approval of a FCL, the Contractor shall appoint a (local to each site) Facility Security Officer (FSO), who must possess or be in the process of obtaining an access authorization equivalent to the Facility Clearance level. The Contractor shall appoint a MC&A Representative who must possess or be in the process of obtaining an access authorization equivalent to the Facility Clearance level. All Key Personnel, who will be determined on a case-by-case basis and defined in the proposal, shall possess or be in the process of obtaining DOE clearances at the “L” level or higher.

Information Technology (IT) System Administrators of Environmental Management (EM) owned systems, shall possess active DOE clearances at the “L” level or higher.

The Contractor management shall determine based on a “need to know” basis those contractor personnel requiring access authorizations for access to LAs and/or classified information or matter or special nuclear material (SNM). The determination(s) for access authorizations must be approved by DOE Portsmouth/Paducah Project Office (PPPO). Following is a list of activities for which the personnel involved may require access authorizations:

- DOE cylinder inspections in the LA

- DUF6 project Fire Alarm/Fire Protection monitoring/support/assessments
- Emergency Management Operations (Drill & Exercise Committee Members, Emergency Management Planning, Drill and Exercise briefings/critiques, Emergency Action Levels (EALs) development, Emergency Operations Center (EOC) Training and members of the EOC Cadre)
- Incidents of Security Concern
- Maintenance on Cylinder Yard Equipment
- MC&A activities
- Nuclear Safety support in security assessments/discussions
- OPSEC Working Group Meetings
- Shared site issues discussions
- IT/Cyber employees

The Contractor shall modify subcontracts to incorporate new or revised DOE Safeguards & Security Directives into subcontracts as necessary and appropriate. For those contracts involving classified information, applicable security clauses are included in the subcontract general terms and conditions, and Contract Security Classification Specification (CSCS) forms are submitted to the site ODSA for processing.

- C.6.8.3 MC&A. The Contractor shall safeguard against the loss, theft, diversion, unauthorized access, misuse, or sabotage of radioactive materials and radioactive sealed sources in accordance with DOE Policies. The Contractor shall develop, document, implement, and maintain a Nuclear Material Control and Accountability (MC&A) Plan (**see Attachment J-8, List of Deliverables**) in accordance with DOE O 474.2, “*Nuclear Material Control and Accountability*.” The Contractor shall submit the MC&A Plan to the CO and the ODFSA for approval within 45 days of NTP. The Contractor shall update the Plan as required. Each update to the MC&A Plan shall be submitted to the CO and the DOE ODFSA for review and approval prior to implementation.

The MC&A Plan shall include the Contractor’s methodology for material control and accountability for uranium feed and conversion products. The CO and the ODFSA must approve the MC&A Plan, and any updates, prior to the Contractor assuming cylinder surveillance and maintenance responsibilities. The Contractor shall develop, document, implement, and maintain an MC&A Program that conforms to the approved MC&A Plan and any additional direction provided by DOE. The Contractor shall ensure that the requirements of the approved S&S directives, plans and procedures flow down to the subcontractors, at any tier, to the extent necessary to ensure subcontractor compliance with the Portsmouth and Paducah Site S&S Programs.

C.6.9 Emergency Management (WBS elements PA/PO3000)

- C.6.9.1 The Contractor shall provide support to DOE by participating in the sites' Emergency Management programs including planning, preparedness, response, recovery, and readiness assurance per DOE O 151.1C.
- C.6.9.2 The Contractor shall, within 60 days of NTP, review, revise as necessary, submit any revisions for CO approval, and (once approved) execute **DUF6 Emergency Plan (see Attachment J-8, List of Deliverables)** and implementing procedures in coordination with the site's Emergency Management Program. The Contractor shall review the Plan annually, and submit any revisions to the CO for approval.
- C.6.9.3 The Contractor shall coordinate with the DOE Emergency Management Lead contractor to provide adequate staff to support the EOC and the Joint Public Information Center efforts for their operations to ensure that adequate support is available to respond to an emergency. The EOC and Joint Public Information Center for each site is provided by the DOE Emergency Management Lead contractor with specific support from other DOE contractors.
- C.6.9.4 The Contractor shall coordinate with the DOE Emergency Management Lead contractor in developing and participating in a drill and exercise program that is compliant with DOE Order 151.1C. The Contractor must participate in each site's training and drill/exercise program.
- C.6.9.5 The Contractor shall prepare and submit for CO approval **Emergency Planning Hazard Surveys and Emergency Planning Hazard Assessments (see Attachment J-8, List of Deliverables)** at least every three years or whenever a major change affecting the hazards occurs. The Contractor shall develop and update as needed, site/facility-specific Emergency Action Levels (EALs) for the spectrum of potential Operational Emergencies identified by the Emergency Planning Hazard Assessment to include protective actions for implementation in the Site Emergency Program.
- C.6.9.6 The Contractor shall coordinate with the Site Lead Emergency Preparedness Contractor and submit required DUF6 information for CO approval to be included in the **Site Integrated Emergency Readiness Assurance Plan (ERAP) (see Attachment J-8, List of Deliverables)** per DOE Order 151.1C.
- C.6.9.7 The Contractor shall, within 60 days of NTP, review, revise as necessary, and submit any revisions for CO approval, DUF6 Continuity of Operation Plan information to be included in the **Site Integrated Continuity of Operations Plan (COOP) (see Attachment J-8, List of Deliverables)** in coordination with the site's COOP program per DOE O 150.1. The Contractor shall review the Plan on an annual basis and submit any revisions to the CO for approval.

C.6.10 Quality Assurance Program (WBS elements LX1300, PA/PO3000)

The Contractor shall develop, implement, assess, and continuously improve the **Quality Assurance Program (QAP)** (see **Attachment J-8, List of Deliverables**) in accordance with DOE Order 414.1D, Quality Assurance, Attachment 1 Contractor Requirements Document (CRD); EM-QA-001, EM Quality Assurance Program, Rev. 1; and, associated DOE directives referenced herein (i.e. Policies, Guides, Manuals, and Orders). The QAP shall be submitted to the CO for approval within 60 days of the NTP and CO approval must be received prior to assuming full responsibility for conversion facility operations.

The Contractor shall perform a QAP effectiveness review annually, and submit to DOE (see Section J, Attachment J-8, “List of Deliverables”) a declaration report that demonstrates QAP implementation.

C.6.10.1 Quality Assurance Program

The Contractor shall review, revise as needed, submit any revisions for CO approval, and (once approved) execute the approved organization-specific **Quality Assurance Program (QAP)** describing how the applicable requirements of the EM QAP will be implemented and passed down to lower-tier organizations. The Contractor may adopt the existing QAP, and shall notify the CO if the existing QAP is being adopted. The Contractor’s QAP shall be applied to all work performed by the Contractor (e.g., mission, safety, and health). The Contractor’s QAP shall include an organizational-specific Quality Assurance Implementation Plan (QIP) describing how the requirements of the QAP are implemented and flowed down to lower tier organizations. The implementation of QAP requirements shall be in accordance with the QIP. The Contractor’s implementation of a specific QAP shall not relieve the Contractor from any responsibility to furnish the contracted items/services in full conformance with all the terms of the Contract, 10 CFR 830 or other applicable laws and regulations. If there is any inconsistency between the specific QA program and any other terms of the Contract, the more restrictive requirements apply.

C.6.10.2 Contractor Assurance System Description

The Contractor shall develop, submit for CO approval, and (once approved) implement the approved **Contractor Assurance System Description** (see **Attachment J-8, List of Deliverables**), as required by DOE O 226.1B, Implementation of DOE Oversight Policy, within 60 days of NTP, with quarterly reports submitted thereafter. This document shall identify and address program and performance deficiencies, opportunities for improvement, and processes to report deficiencies to the responsible managers and authorities, and shall be tailored to the needs of the DUF6 Conversion Project. The Assurance System Description shall establish and effectively implement corrective and preventive actions, and share lessons learned across all aspects of the work scope. The Contractor shall review and update annually their QAP and the Site Assurance System Description and submit to the CO for approval.

C.6.10.3 Issues Management System

The Contractor shall develop and implement a comprehensive **Issues Management System** (see **Attachment J-8, List of Deliverables**) for the identification, assignment of significance category, and processing of quality or safety-related issues identified within the Contractor's organization in accordance with DOE Order 414.1D, Quality Assurance, Attachment 1, Contractor Requirements Document; the EM Quality Assurance Program, EM-QA-001; associated DOE directives referenced herein (i.e. Policies, Guides, Manuals, and Orders). The Issues Management System shall be submitted to the CO for approval within 60 days of the NTP.

The Contractor shall develop and implement a single computerized comprehensive Issues Management System using a "zero-threshold" level for the identification, assignment of significance category, and processing for all issues raised across all levels of the Contractor's organization. The significance assigned to the issues shall be the basis for all actions taken by the Contractor in correcting the issue from initial causal analysis and reviews for reporting to DOE through completion of Effectiveness Reviews, if required, based on the seriousness of the issue. All issues are to be tracked in one combined location and disseminated to the DOE IPT. (see **Attachment J-8, List of Deliverables**)

C.6.11 Engineering

The Contractor shall provide engineering services so as to accomplish the technical scope associated with the operations and maintenance of the DUF6 conversion facilities and the surveillance and maintenance of the cylinder yards. The engineering services include such technical disciplines as mechanical engineering, electrical engineering, instrumentation and control engineering, process engineering, system engineering and nuclear safety basis engineering. The baseline will detail the planned engineering tasks and level of effort to support expected plant operations and maintenance. The Contractor shall propose the content of a periodic Engineering Services Report for the DOE CO (see Attachment J-8, List of Deliverables) describing expected engineering services for planned operation and maintenance work in order to assess the level of Engineering support needed for long term facility operations. Once agreement is reached on the content and periodicity of this report and any adjustments to the Contract value, the Contractor shall provide the report as agreed to by the DOE CO. (WBS elements PA/PO3000)

C.6.12 Records Management (WBS elements PA/PO3600)

C.6.12.1 **Records Management Program:** The Contractor shall manage all records (regardless of media, and including subcontractor records) generated/received in the performance of the Contract, including records obtained from a predecessor contractor in accordance with Title 44 USC, Chapters 21, 29, 31, 33, and 35; 36 CFR, Chapter 12, Subchapter B, "Records Management"; DOE O 243.1B "Records Management Program" and any other DOE requirements as directed by the CO. The Contractor shall be responsible for all records

management and document control in support of its operations. Records Management activities include, but are not limited to: tasks associated with creation/receipt, maintenance, storage/preservation, protecting, scheduling, indexing and dispositioning active and inactive records (including e-mails); managing classified records (as applicable); providing all employees and subcontractors with records management training; retrieving records from on- and off-site storage facilities; supporting records management data calls from the National Archives and Records Administration (NARA); and, supporting ongoing Freedom of Information Act (FOIA), Privacy Act, Energy Employees Occupational Illness Compensation Program (EEOICPA), the former worker medical screening program, the Chronic Beryllium Disease Prevention Program, congressional inquiries, legal discoveries and other record requests.

All records subject to the management of the Contractor (e.g., records in support of its operation), are to be inventoried, scheduled and dispositioned in accordance with Federal laws, regulations, DOE Directives, and an approved Records Management Plan. The Contractor shall, within 60 days of the NTP review, revise as necessary, submit any revisions for CO approval, and (once approved) execute the **Records Management Plan (see Attachment J-8, List of Deliverables)**. The Plan shall be updated thereafter when changes occur.

- **Electronic Records Management System (ERMS):** The Contractor shall develop and implement records management controls to ensure that the identification, maintenance, and disposition all records (regardless of media), including electronic and email, are managed utilizing an ERMS (Documentum or equivalent) in accordance with Federal and DOE requirements and guidelines for all records, including historical records.

The Contractor shall develop and implement a process to ensure electronic records submitted to records management have been scanned or converted to meet National Archives and Records Administration (NARA) requirements, including those listed in Attachment J-14, "Selected NARA Requirements," and a DOE-approved Image Quality Statistical Sampling Plan that is based on industry standards (**see Attachment J-8, List of Deliverables**). All records (regardless of media) must be scheduled, arranged, and cutoff by collections (e.g., case file, project, chronologically, numerically, alphabetically, etc.) for proper disposition in accordance with the NARA-approved DOE records disposition schedules.

- **Records Ownership:** Except for those defined as Contractor-owned (in accordance with DEAR 970.5204-3, "Access to and Ownership of Records", see Section I), all records (see 44 U.S.C. 3301 for the statutory definition of a record) acquired or generated by the Contractor (and subcontractors) in performance of this Contractor including, but not limited to records from a predecessor contractor (if applicable) and records described by the Contract as being maintained in Privacy Act systems of

record (Section H clause, Privacy Act System of Records) shall be the property of the Government.

- **Audiovisual Records:** The Contractor shall implement records management requirements for the creation, maintenance, and storage of audiovisual records in accordance with 36 CFR 1237 and 36 CFR 1235.42 and any updated NARA requirements/guidance.
- **Vital Records:** The Contractor shall develop and implement a vital records program, including a vital records inventory in accordance with 36 CFR 1223, Managing Vital Records, and DOE O 243.1B “Records Management Program” (see **Attachment J-8, List of Deliverables**).

Creation/Receipt: The Contractor shall develop and implement recordkeeping requirements that reflect adequate and proper documentation of all Contractor (and subcontractor) records generated and/or received (regardless of media) in the performance of their contracts as required by Federal regulations found in 36 CFR Chapter XII, Subchapter B, *Records Management*.

- **Electronic Information Systems (EIS):** The Contractor shall manage records contained in electronic information systems (EIS) by incorporating recordkeeping controls into the system or export the records into the current ERMS (Documentum or equivalent) in accordance with 36 CFR 1236, Electronic Records Management. The Contractor must design and implement migration strategies to counteract hardware and software dependencies of electronic records whenever the records must be maintained and used beyond the life of the information system in which the records are originally created and captured. The Contractor shall provide a list of all EIS’ to DOE annually utilizing the format provided by DOE (see **Attachment J-8, List of Deliverables**), including Contractor-owned records.
- **Inventory and File Plan:** The Contractor shall develop and maintain up-to-date site-wide inventories, a site-wide file plan and systems that provide for the identification, location, arrangement, assignment of disposition authority, and retrieval of all categories (record series) of records created and received (see **Attachment J-8, List of Deliverables**).

Maintenance/Use: The Contractor shall maintain and preserve all records, including the historical records collection (paper and electronic) stored on-site, at the FRC and in Documentum.

- **Quality Records:** The Contractor shall ensure records identified as Quality records under the American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME) Nuclear Quality Assurance (NQA)-1 are categorized (lifetime/non-permanent); managed in accordance with NQA-1 and 36 CFR Chapter XII, Subchapter B; and are maintained for traceability to the applicable items, activity or facility.

- **Privacy Act Records:** The Contractor shall ensure records that contain personal information retrieved by name, or another personal identifier are maintained in Privacy Act systems of records, in accordance with Federal Acquisition Regulation (FAR) 52.224-2, *Privacy Act*, and DOE O 206.1, “*DOE Privacy Program*.”
- **Contaminated Records:** The Contractor shall develop and implement a plan to incorporate the processing of newly generated and historical records from potentially contaminated areas and those stored in the records vaults in the WSHF and RPP to ensure the prompt transfer of records to the records vault and/or release of storage at an FRC/NARA. Contaminated records, depending on retention period, can be reproduced to allow for retention of the copy as the “record” and destruction of the contaminated copy.
- **Records Requests:** The Contractor shall respond to records management data calls (see **Attachment J-8, List of Deliverables**) by NARA and DOE as requested and process record requests for the FOIA, the Privacy Act, the former worker medical screening program, the Chronical Beryllium Disease Prevention Program, congressional inquiries, legal discoveries and other record requests.

Records Disposition: The Contractor shall develop and implement a Records Disposition Plan, which shall include processing records to storage (e.g., on-site, FRC, electronic to ERMS) and the destruction process for records and information content (see **Attachment J-8, List of Deliverables**). The Contractor shall disposition all records including records from a predecessor contractor in accordance with the NARA-approved DOE Records Disposition Schedules and applicable federal laws and regulations. Disposition activities include scanning to electronic (permanent to NARA), transferring of paper records to an FRC, maintaining electronically in an ERMS, and/or destroy once retention has been met and proper approvals obtained. Transfers to the FRC, NARA and commercial storage requires DOE RMFO and record destructions must be submitted to the DOE RMFO for review and obtaining of DOE Legal Counsel Approvals prior to destruction.

Document Control: The Contractor shall develop, implement and maintain sound document control systems and processes ensuring efficient tracking, retrieval, revision control, and distribution of documents, including drawings.

C.6.12.2 EEOICPA (WBS elements PA/PO3600)

The EEOICPA establishes a program to provide compensation to current and former employees of the DOE, its contractors and subcontractors, companies that provided beryllium to DOE, and atomic weapons employers (AWEs). Under EEOICPA, the DOE has a requirement to verify employment histories, provide medical records, and provide radiation dose records and other information pertinent to National Institute for Occupational Safety and Health (NIOSH) radiation dose reconstruction and Department of Labor (DOL) Subtitle B and

Subtitle E case preparation for anyone who applies for compensation under EEOICPA.

The Contractor shall establish a program and respond to the requirements of the EEOICPA for all employees and subcontractors for which the Contractor may have records. The activities shall include:

- a) Perform the work necessary to complete EE-5 Employment Verification Forms requested by the U.S. Department of Labor (DOL) for the EEOICPA Subtitle B program.
- b) Perform the work necessary to provide personnel exposure information requested by the National Institute for Occupational Safety and Health (NIOSH) as part of the EEOICPA Subtitle B program, as follows:
 - 1) Research and retrieve records needed to complete claims forms;
 - 2) If necessary, work with corporate entities or unions to verify employment of former site workers;
 - 3) Provide visitor personnel exposure or information requested;
 - 4) Complete declassification, as needed, of records required for the processing of claims form;
 - 5) Complete and sign off on all necessary claims forms associated with the request; and,
 - 6) Return completed forms and records requested to NIOSH through the DOE Secure Electronic Records Transfer (SERT) system.
- c) Perform the work necessary to complete Document Acquisition Requests (DARs) submitted by DOL as part of the EEOICPA Subtitle E program, as follows:
 - 1) Research and retrieve records needed to complete claims forms;
 - 2) If necessary, work with corporate entities or unions to verify employment of former site workers;
 - 3) Complete declassification, as needed, of records required for the processing of claims;
 - 4) Complete and sign off on all necessary claims forms associated with the request; and
 - 5) Return completed forms and records requested to DOL through the DOE SERT system.
- d) Perform the work necessary to provide records requested by NIOSH or DOL as part of a site characterization or other special project under the EEOICPA program, as follows:
 - 1) Complete declassification, as needed, of records requested by NIOSH or DOL for site characterization research projects; and
 - 2) Coordinate all work with the site EEOICPA point of contact and the Office of Worker Screening and Compensation Support (AU-14) as applicable.
- e) The Contractor shall respond to any other inquiries and perform special projects as required by the EEOICPA and approved by the Office of Worker Screening and Compensation Support (AU-14).
- f) Perform other necessary EEOICPA related records work, as needed.

- g) Maintain and appropriately arrange EEOICPA case files on all claims processed and ensure properly scheduled in accordance with the NARA-approved DOE Records Disposition Schedules.
- h) Maintain local records to track the activities under EEOICPA and submit monthly financial reports through the DOE SERT system.

The response time for tasks (a) through (c) is 60 days from receipt of request.

C.6.12.3 Contract Close-Out - Records

The Contractor shall submit a **Records Contract Close-Out Plan (see Attachment J-8, List of Deliverables)**, including budget and schedule, to the CO for review and approval, no later than 90 days before the end of the Contract performance period as specified in the Section F clause entitled "Term of the Contract." The approved Records Contract Close-Out Plan shall be implemented by the Contractor, and shall include all remaining records management activities necessary to close out the Contract including, but not limited to, the remaining records retention and disposition activities (these activities could include final disposition of records or turnover of records management activities to a successor contractor). The Records Contract Close-Out Plan shall at a minimum provide for a final active/inactive records inventory of both Government-owned and Contractor-owned records of all media types, turnover of ERMS and/or other EIS, and records finding aids **or document tracking systems**.

C.6.13 Property Management (WBS elements PA/PO3600)

C.6.13.1 The Contractor shall manage personal property in accordance with the property clauses of this Contract, 41 CFR 101, 41 CFR 109, and DOE Order 580.1A, Change 1, and shall prepare and submit the following items for DOE information or approval:

- **Report of Annual Physical Inventory Results (see Attachment J-8, List of Deliverables);**
- **Report of Loss, Damage, Destruction or Theft (see Attachment J-8, List of Deliverables);**
- **Property Information Database System (PIDS) (see Attachment J-8, List of Deliverables);**
- **Personal Property Scorecard Plan-New Fiscal Year (see Attachment J-8, List of Deliverables);**
- **Personal Property Scorecard Report- Past Fiscal Year (see Attachment J-8, List of Deliverables);**
- **Reports of Sales and Exchanges (see Attachment J-8, List of Deliverables);**
- **Motor Vehicle Fleet Reports (FAST) (see Attachment J-8, List of Deliverables);**
- **Plans and procedures for property management business system (see Attachment J-8, List of Deliverables);**

- **Final property reports for physically completed or terminated contracts (see Attachment J-8, List of Deliverables);**
- **Special Reports for Motor Vehicles (see Attachment J-8, List of Deliverables);**
- **GSA Report of Property Furnished to Non-Federal Activities (see Attachment J-8, List of Deliverables).**

The Contractor shall maintain a cradle to grave high-risk material and equipment identification and reporting process.

- a. The Contractor shall disposition classified equipment and material in accordance with the requirements of 1 CFR 109-45.309-52 and DOE M 470.4-4A, "Information Security Manual" and DOE Order 205.1B Chg. 3, "DOE Cyber Security Program."
- b. The Contractor shall identify, control and disposition high-risk property as required by 41 CFR 109-1.53 and DOE Order 580.1A Chg. 1, "DOE Personal Property Management Program."
- c. The Contractor shall disposition Automatic Data Processing Equipment (ADPE) as required by 41 CFR 109-43.307-53, DOE Order 580.1A Chg. 1 CRD and DOE Order 205.1B.
- d. The Contractor shall disposition nuclear-related or proliferation sensitive property in accordance with the requirements of 41 CFR 109-45.309-53 and DOE Order 474.2 Chg. 2, Nuclear Material Control and Accountability."
- e. The Contractor shall coordinate with the Community Reuse Organization for the sale of reusable/recyclable equipment and material in order to maximize recovery of losses where possible.

The Contractor shall administer the personal property management program and document in an automated database all personal property actions related to acquisition, use, and disposition of personal property assets. Administration of the program includes all Government-owned personal property utilized under this Contract.

The Contractor shall perform personal property disposition operations to manage excess and surplus property, conduct public personal property sales and coordinate other personal property disposition methods. Sales of surplus DOE inventory will be conducted by the Contractor when it is in the best interests of the Government. Surplus property to be sold will be reviewed and approved by the DOE Property Administrator prior to sale.

The Contractor shall ensure all written warranties for items purchased using federal funds are issued with DOE as having full ownership title.

The Contractor shall manage and administer all aspects of a sound vehicle and equipment fleet program, for all DOE-owned, GSA-Leased and commercial leased vehicles in accordance with regulations and guidelines as set forth by the Department of Energy, General Services Administration (GSA), and Federal Property Management Regulations. The Contractor shall replace as necessary at end of useful life, non-GSA vehicles with GSA Fleet vehicles that can use alternative energy, if available. The Contractor shall submit all annual reports related to fleet management as required by GSA and 41 CFR Part 102-34, Subpart J and as requested by DOE.

C.6.13.2 The Contractor shall manage real property in accordance with 41 CFR 102 and DOE Order 430.1B, "Real Property and Asset Management" and shall perform the following activities to ensure that real property assets assigned to the Contractor or in any way within the area of responsibility of the Contractor are available, utilized, and in a suitable condition to accomplish DOE's missions:

C.6.13.2.1 The Contractor shall maintain real property records, including leases, licenses, land agreements, contracts, etc. associated with conversion facility operations at the Portsmouth and Paducah sites.

C.6.13.2.2 The Contractor shall provide all **Other Real Property Reporting (see Attachment J-8, List of Deliverables)** as requested by the DOE CRS in furtherance of site real estate activities. Such support may include due diligence in leasing and disposal, managing real estate processes, property and facility management and space planning.

C.6.13.2.3 The Contractor shall coordinate actions to acquire and dispose of real property assets with the DOE CRS.

C.6.13.2.4 The Contractor shall maintain, in a complete and current condition, all real estate records identified by DOE.

C.6.13.2.5 Maintenance: The Contractor shall maintain real property assets in a manner that promotes operational safety, worker health, environmental compliance, property preservation and cost-effectiveness while meeting the program missions. The Contractor shall utilize a balanced approach that not only sustains the assets, but also provides for their recapitalization. The Contractor shall develop, submit to the CO for approval within 90 days of NTP, and (once approved) implement a **Maintenance Management Program (see Attachment J-8, List of Deliverables)** that includes, at a minimum, the following:

1. A work control system.

2. Preventive, predictive, and corrective maintenance will be used.
3. A Computerized Maintenance Management System (CMMS), fully-accessible by the CO or designee, to track and report maintenance activities and costs at the real property asset level, to include at a minimum:
 - a. All scheduled maintenance activities.
 - b. Any unscheduled maintenance activities.
 - c. Material costs per maintenance activity.
 - d. Direct labor hours per maintenance activity.
4. Deferred Maintenance (DM)
 - a. DM estimates based upon nationally recognized cost estimating systems or the DOE Condition Assessment Information System (CAIS).
 - b. Management of deferred maintenance and repair needs.
 - c. Identification of five-year maintenance and repair requirements (sustainment) and funding for deferred maintenance reduction within the DOE approved maintenance management program in C.6.13.2.5 above.
 - d. The Contractor shall comply with Statements of Federal Financial Accounting Standards (SFFAS) 6 and 42 to improve the measurement of deferred maintenance and repairs (DM&R).
5. A method to prioritize maintenance requirements
6. A system to budget and track maintenance expenditures.
7. Identification of five-year recapitalization requirements to replace or modernize existing facilities.

C.6.13.2.6 Facilities Information Management System: The Contractor shall maintain the **Facilities Information Management System (FIMS) (see Attachment J-8, List of Deliverables)** data and records in accordance with DOE annual FIMS guidance and reporting requirements. **FIMS Reporting (see Attachment J-8, List of Deliverables)** shall include Recalculation of FIMS Replacement Plant Value (RPV), FY Deferred Maintenance, FY Actual Maintenance and FY Federal Real Property Council (FRPC) Data Elements. The Contractor shall ensure that information maintained, is no less than 90% accurate, demonstrated and validated annually.

C.6.13.2.7 Condition Assessments Survey (CAS): The Contractor shall develop and implement a **CAS Program (see Attachment J-8, List of Deliverables)** in accordance with DOE O 430.1B, annual

FIMS Guidance and annual CAS guidance to include, at a minimum, the following:

All facilities receive a condition assessment survey at least once during any 5-year period and more frequently based on facility status, mission, importance and magnitude of the hazards associated.

The Contractor's condition assessment surveys shall be performed under the supervision of a qualified professional engineer and by qualified technical personnel who are familiar with the facility, equipment and components, applicable building codes, and safety requirements.

Condition assessments surveys result in a determination of the current condition of real property assets, their estimated time to failure, the optimal period to accomplish maintenance actions based on engineering/maintenance analysis, and the estimated cost to correct identified deficiencies.

The Contractor shall estimate repair costs for the deficiencies identified during the condition assessments using the DOE Condition Assessment Information System (CAIS) or another nationally recognized cost estimating system. Costs shall include Contractor overhead/burden.

The Contractor shall develop and maintain five-year sustainment requirements based on projections of serviceability, economic life, condition assessments, the mission of facilities, and projected funding for deferred maintenance reduction. These requirements shall be summarized in the Ten Year Site Plans (TYSP).

C.6.13.2.8 Ten Year Site Plans (TYSP): The Contractor shall coordinate with lead / other coordinating contractor to prepare the annual **TYSP (see Attachment J-8, List of Deliverables)** in accordance with DOE O 430.1B, "Real Property and Asset Management."

C.6.13.2.9 Sustainability: The Contractor shall develop or support development of commitments to identify its respective contribution toward meeting the Department's sustainability goals. The Contractor shall coordinate with each site lead coordinating contractor to prepare and submit the **Site Sustainability Plan (see Attachment J-8, List of Deliverables)** in accordance with DOE O 436.1, "Departmental Sustainability."

C.6.13.2.10 Value Engineering (VE). The Contractor shall use VE techniques in a tailored manner to reduce DOE's real property asset ownership costs (e.g., acquisition, operations, maintenance, and disposal)

while maintaining the necessary level of performance and safety. For real property asset acquisition, disposition, demolition, repair, and recapitalization projects where the total value for a single item of purchase or contract is expected to be greater than \$5 million, the Contractor shall perform a VE assessment, which shall be provided to DOE for review and information (see **Attachment J-8, List of Deliverables**).

C.6.14 Information Technology (IT) Infrastructure (WBS elements LX1000, PA/PO3600)

The Contractor shall perform all IT support and management services at the Lexington, Portsmouth and Paducah DUF6 facilities. The Contractor shall provide personnel with the qualifications, technical knowledge, experience and skills required for efficient operation of IT support and management services. The Contractor's computing and telecommunications systems shall be compatible with the computing and telecommunications systems utilized by DOE. The Contractor shall provide reliable and secure telecommunications and networked voice, video and data services, wireless services and Mobile Device Management for the Lexington, Portsmouth and Paducah DUF6 facilities. The Contractor's computing and telecommunications systems shall be compatible with the computing and telecommunications systems utilized by DOE. The IT Infrastructure shall include network and server hardware that is energy efficient and reduces the IT footprint (i.e. blade servers and chassis and modular network equipment). The IT Infrastructure shall include the following items that are in the DOE Strategic Plan: VMware View suite, redundant SAN environment and upgraded network equipment to support ISCSI for the server and storage environments. The IT Infrastructure shall include hardware and storage that will provide scalability to ramp up or down along with the needs of the sites. Additionally the Contractor shall ensure optimization of the site IT servers facilitates long term cost savings and system reliability for the DUF6 task.

C.6.15 Cybersecurity (WBS elements LX1000; PA/PO3600)

The contractor shall comply with the Cyber Security requirements as specified in DOE O 205.1B, "Department of Energy Cyber Security Program," the applicable DOE Risk Management Approach Implementation Plan (RMAIP), and all current versions of applicable National Institute of Standards & Technology (NIST) Special Publications (SP). The Contractor shall be proactive regarding cyber threats, and systems shall be protected based on evolving threats in accordance with the Federal Information Systems Management Act (FISMA). The FISMA requires all IT systems be Authorized to Operate (ATO). The Contractor shall obtain an ATO designation from the DOE Delegated Federal Authorizing Official (AO) to operate the General Support System and Industrial Control Systems for the Lexington, Portsmouth and Paducah DUF6 facilities. Only the AO has the ability to grant an ATO or a Denial of Authorization to Operate (DATO) for any system operated by the Contractor on behalf of DOE-EM. The IT systems covered under this Contract shall operate in accordance with all terms and conditions specified in the ATO and shall not operate if a DATO has been issued. If an AO issues a DATO, all costs associated with any mission delay shall be the responsibility of the Contractor, not DOE.

The Contractor shall ensure that all Cyber Security requirements are flowed down to all subcontracts supporting this Contract, including the handling of sensitive information to include personally identifiable information (PII), protecting information and information systems from unauthorized access, and reporting any significant attempts or successful intrusions into these systems by unauthorized individuals. The contractor shall develop, implement and maintain a System Security Plan 60 days after the NTP and updated annually thereafter. The System Security Plan shall be submitted to DOE for approval. The Contractor shall develop, implement and maintain an effective assurance system, incident handling plan, and other plans as detailed in the current revision of DOE O 205.1B.

C.6.16 Critical Interfaces and Integration

- C.6.16.1 The Contractor is one of multiple entities performing work under the direction or permission of DOE at each site. In general, other DOE site contractors are responsible for aspects of the larger site, and prior to completion of the Transition Operations Phase, the Incumbent Contractor is responsible for aspects within the areas under their direct control, including the cylinder yards. The Contractor shall interface with many other entities for utilities and services to enable successful completion of conversion operations under this Contract. The nature of those interfaces with other DOE site contractors are described in Section J, Attachment J-5, entitled “DUF6 Services & Contract Interface Requirements Matrix.” (WBS elements LX1000; PA/PO1300, 3600)
- C.6.16.2 The Contractor shall support and actively participate in a monthly meeting between the DOE and site contractors to coordinate and integrate site activities and issues. The meeting shall be attended by a senior manager from the Contractor’s organization as appropriate, or as directed by the Contacting Officer’s Representative (COR). (WBS element LX1000)
- C.6.16.3 The Contractor shall establish a management office with personnel physically located at Lexington, Kentucky for coordination with the PPPO. This office shall provide the resources to coordinate and manage the administrative activities of the conversion facility operations at the Portsmouth and Paducah sites through a single, point-of-contact Project Manager as identified in the Section H clause entitled “Key Personnel.” This individual and his/her staff shall provide, at a minimum, functions of accounting, finance, budget, and senior leadership to interface with the DOE PPPO Manager, the DOE DUF6 FPD/OAM, and the DOE CO. All Contract deliverables will be submitted through this office to the PPPO. (WBS element LX1000)

C.7 CYLINDER MANAGEMENT (FIRM FIXED PRICE) (WBS elements PA/POFFP)

C.7.1 General

The Contractor shall perform all labor associated with the following activities:

C.7.1.1 Cylinder Surveillance & Maintenance (S&M)

The Contractor shall perform S&M on the cylinders in the CID, and uranium oxide (UO_x) filled cylinders. During execution of the TOP, the Contractor shall review the existing approved **Cylinder Surveillance and Maintenance Plan (see Attachment J-8, List of Deliverables)** and revise this Plan, as necessary. Any revisions must be approved by the CO. The Contractor shall provide updates to this Plan, as needed, but no less than annually, and submit to the CO for approval. Any revisions recommended by the Contractor must be approved by DOE prior to the Contractor's assuming S&M responsibility and must address the current mission, safety, and regulatory requirements.

The Contractor **Cylinder Surveillance and Maintenance Plan (see Attachment J-8, List of Deliverables)** shall include the following programs:

Cylinder Surveillance
Cylinder Maintenance
Cylinder Yards and Equipment S&M

The Contractor shall implement each of these programs in compliance with the **Cylinder Surveillance and Maintenance Plan (see Attachment J-8, List of Deliverables)** and the latest versions of the Commonwealth of Kentucky Agreed Orders and State of Ohio Environmental Protection Agency Director's Final Findings and Orders.

The Contractor shall maintain records of cylinder and cylinder yard inspection and maintenance and shall provide these to DOE upon request (**see Attachment J-8, List of Deliverables**). The Contractor's maintenance records system shall be configured so as to provide notice of when routine and preventive maintenance is required.

C.7.1.2 CID Management

The CID contains cylinder defect characterization, contents, inspection status, surveillance and maintenance (S&M) activities, and location for the cylinder inventory. The CID includes DUF6, low-enrichment uranium (LEU) hexafluoride (UF6), normal UF6, and heel and empty cylinders. The Contractor shall maintain and update the CID beginning on the date the Contractor assumes responsibility for cylinder management as designated by the CO at the end of the Transition Operations Phase. The Contractor shall generate cylinder information or cylinder content reports as requested by DOE to support project and program requirements (**see Attachment J-8, List of Deliverables**). The Contractor shall employ the CID to track and schedule all cylinder inspections. All inspection data shall be uploaded to the CID. The Contractor shall control the integrity of the CID through use of a CID software configuration management procedure. The Contractor shall maintain and update this procedure as needed, but no less than annually; all proposed

updates shall be submitted to the CO for approval (**see Attachment J-8, List of Deliverables**). The Contractor shall also adopt or develop a database to track the inventory of cylinders containing UOx; this database shall include cylinder integrity inspection (specifically for U.S. Department of Transportation compliance), contents, inspection status, surveillance and maintenance (S&M) activities, and location for the cylinder inventory (**see Attachment J-8, List of Deliverables**).

C.7.1.3 Cylinder Delivery

The Contractor shall promptly, safely and compliantly deliver cylinders from the Cylinder Storage Yards to the DUF6 Project Conversion Facilities. Cylinder delivery shall support planned conversion operations in the DUF6 Project Conversion Facilities as described in Section C.4 of the Contract.

The Contractor shall safely and compliantly return uranium oxide-containing cylinders to the Cylinder Storage Yards, place them into storage, and manage them in accordance with the requirements of Section C.6 of the Contract. The Contractor shall safely and compliantly transfer empty, heel or new cylinders between the DUF6 Project Conversion Facilities and the Cylinder Storage Yards in support of planned conversion operations.

The Contractor shall transfer other cylinders as directed in accordance with separate, mutual agreements. For these other, directed cylinder transfers, the Contractor shall propose a price which shall be negotiated with the CO.

C.7.2 PORTSMOUTH Cylinder Storage Yards Description

For the purpose of this section, the cylinder yards at Portsmouth are comprised of the following areas and facilities.

The DUF6 Conversion Project Cylinder Storage Yards encompass three cylinder storage yards located on the Portsmouth site. Cylinder storage yards X-745C and X-745E are located on the northwest side of the site just south of Perimeter Road, while the X-745G Cylinder Storage Yard lies to the north of Perimeter Road. The use of the X-745G Cylinder Storage Yard is shared with another contractor (see the DUF6 Services and Contracts Interface Requirements Matrix). Attachment XX provides a map of the Portsmouth Cylinder Storage Yards.

The DOE X-745C, X-745E, and X-745G-1 UF6 Cylinder Storage Yards are currently used to store solid UF6 material in 2.5-, 10-, or 14-ton UF6 cylinders. Most of the UF6 cylinders contain depleted UF6 (tails). However, clean empty cylinders; normal feed cylinders; cylinders with depleted, normal feed or enriched heels; cylinders with product material ≥ 1.0 weight % ^{235}U but ≤ 5.0 weight % ^{235}U (with exceptions that have a higher weight percentage); or waste materials from cylinder surveillance and maintenance activities may also be stored in these cylinder storage yards. Additionally, depleted uranium oxide in cylinders and drums from the DUF6 Conversion Facility may be stored in the cylinder storage yards in designated areas. Refer to the Cylinder

Information Database (CID) for the numbers and types of cylinders in inventory (Note: the CID does not include oxide filled cylinders; however, the Contractor shall be responsible for oxide filled cylinder S&M).

The X-745C Cylinder Storage Yard is located at the northwest corner of the plant and is used primarily for the storage of tails material in 14-ton thin-wall (Model 48G) cylinders. The cylinder storage area is paved with concrete eight inches thick to provide a stable base for the single- or double-stacked cylinders. The lot has an area of approximately 600,000 square feet with a capacity of approximately 17,000 Model 48G double-stacked cylinders. The southeast portion of the lot is compacted gravel.

The X-745E Cylinder Storage Yard is located north of the X-745C cylinder storage yard and west of the X-344 Toll Transfer Facility. The X-745E Cylinder Storage Yard is paved with 11- inch thick concrete. The pad is designed to provide a stable base for single or double-stacked cylinders. This cylinder storage yard occupies an area of approximately 215,000 square feet and a capacity of approximately 5,000 10- or 14-ton cylinders. Enriched and depleted UF6 48-inch diameter cylinders may be single- or double-stacked and empty, heel, and partially filled cylinders may be triple-stacked. Similarly, the 2.5-ton cylinders are currently double-stacked (with the exception of four 2.5-ton cylinders with greater than safe mass that are single-stacked) and stored on the X-745E Cylinder Storage Yard.

The X-745G Cylinder Storage Yard is located on the northern side of the Portsmouth site, approximately 45 ft. north of Perimeter Road. The paved lot has a storage capacity of 280,000 square feet. Empty, heel, and partially filled cylinders may be triple-stacked. Actual capacity of the cylinder storage yard is variable based on the final stacking arrangements and type or size of cylinder. A seven-ft tall woven-wire security fence topped with barbed wire surrounds the facility. There is a vehicle entrance into the facility through gates to Perimeter Road at the southern side of the cylinder storage yard as well as a gate for train traffic. There is a second vehicle gate in the fence on the northern side of the cylinder storage yard. The cylinder storage yard is divided into X-745G-1, which is controlled by the Contractor and X-745G-2, which is shared with another contractor (see the DUF6 Services and Contracts Interface Requirements Matrix). The Contractor shall only be responsible for cylinder and cylinder yard S&M for the areas of X-745G-2 within its control.

The cylinder yards do not include the cylinder staging areas adjacent to the DUF6 conversion building.

C.7.3 PADUCAH Cylinder Storage Yards Description

The DUF6 Conversion Project Cylinder Storage Yards encompass 19 cylinder storage yards, all open areas varying in size from 17,700 square feet - 470,409 square feet. Seven of the cylinder storage yard surfaces are presently compacted dense grade aggregate (DGA), two are partially DGA and partially concrete, and ten are concrete. Two of the cylinder storage yards are located in the northwest portion of the Paducah site and two

other cylinder storage yards are located in the northeast portion of the Paducah site. The remaining fifteen cylinder storage yards are clustered in the southern portion of the Paducah site. Eleven cylinder storage yards in the southern portion of the site are completely enclosed as a group by a combination security fence and a property protection area fence. The other eight cylinder storage yards are located within the security fence. Attachment provides a map of the Paducah Cylinder Storage Yards.

The C-745-A Cylinder Storage Yard is comprised of compacted DGA, occupies an area of approximately 207,975 square feet and has a capacity of approximately 4,200 10-ton or 14-ton cylinders.

The C-745-B Cylinder Storage Yard is comprised of compacted DGA, occupies an area of approximately 468,000 square feet and has a capacity of approximately 8,800 10-ton or 14-ton cylinders.

The C-745-D Cylinder Storage Yard is comprised of both concrete and compacted DGA. This storage yard occupies an area of approximately 154,903 square feet and has a capacity of approximately 1,700 10-ton or 14-ton cylinders.

The C-745-E Cylinder Storage Yard is comprised of both concrete and compacted DGA, occupies an area of approximately 114,000 square feet and has a capacity of approximately 2,000 10-ton or 14-ton cylinders.

The C-745-F Cylinder Storage Yard is comprised of concrete and DGA. This storage yard occupies an area of approximately 246,530 square feet and has a capacity of approximately 5,600 10-ton or 14-ton cylinders.

The C-745-G Cylinder Storage Yard is comprised of concrete. This storage yard occupies an area of approximately 370,826 square feet and has a capacity of approximately 6,600 10-ton or 14-ton cylinders. The C-745-G Cylinder Storage Yard contains five small metal-sided buildings. The buildings are supplied with electrical service for lighting and receptacles.

Building C-745-G1 is a seven ft x ten ft pump house containing pumps to prevent overflow of the C-745-G basin. Buildings C-745-G2, C-745-G3, C-745-G4, and C-745-G5 are commonly referred to as cylinder paint buildings, each measuring 50 ft x 90 ft. The cylinder paint buildings are currently used for storing cylinder yard equipment (including cylinder handling equipment and vehicles), furniture, and new equipment. No hazardous materials are stored in these buildings.

The C-745-H Cylinder Storage Yard is comprised of compacted DGA and occupies an area of approximately 223,650 square feet and has a capacity of approximately 750 10-ton or 14-ton cylinders.

The C-745-K Cylinder Storage Yard is comprised of concrete. This storage yard occupies an area of approximately 184,097 square feet and has a capacity of approximately 4,200 10-ton or 14-ton cylinders.

The C-745-L Cylinder Storage Yard is comprised of concrete. This storage yard occupies an area of approximately 303,850 square feet and has a capacity of approximately 7,000 10-ton or 14-ton cylinders.

The C-745-M Cylinder Storage Yard is comprised of concrete. This storage yard occupies an area of approximately 118,531 square feet and has a capacity of approximately 2,800 10-ton or 14-ton cylinders.

The C-745-N Cylinder Storage Yard is comprised of compacted DGA. This storage yard occupies an area of approximately 77,960 square feet and has a capacity of approximately 1,700 10-ton or 14-ton cylinders.

The C-745-P Cylinder Storage Yard is comprised of concrete and compacted DGA. This storage yard occupies an area of approximately 85,869 square feet and has a capacity of approximately 1,900 10-ton or 14-ton cylinders.

The C-745-Q Cylinder Storage Yard is comprised of compacted DGA and occupies an area of approximately 265,600 square feet and has a capacity of approximately 5,300 10-ton or 14-ton cylinders.

The C-745-R Cylinder Storage Yard is comprised of compacted DGA and occupies an area of approximately 133,000 square feet and has a capacity of approximately 4,200 10-ton or 14-ton cylinders.

The C-745-S Cylinder Storage Yard is comprised of concrete. This storage yard occupies an area of approximately 93,474 square feet and has a capacity of approximately 2,300 10-ton or 14-ton cylinders.

The C-745-T Cylinder Storage Yard is comprised of concrete. This storage yard occupies an area of approximately 470,409 square feet and has a capacity of approximately 10,000 10-ton or 14-ton cylinders.

The C-745-U Cylinder Storage Yard is comprised of compacted DGA, occupies an area of approximately 175,000 square feet and has a capacity of approximately 3,600 10-ton and 14-ton cylinders.

The C-745-V Cylinder Storage Yard is comprised of compacted DGA, occupies an area of approximately 139,700 square feet and has a capacity of approximately 3,900 10-ton and 14-ton cylinders.

The C-745-W Cylinder Storage Yard is comprised of concrete, occupies an area of approximately 17,700 square feet and has a capacity of approximately 300 10-ton and 14-ton cylinders.

The DUF6 Conversion Project Cylinder Storage Yards are currently used to store solid UF6 material in 2.5-, 10-, 12.5-, 14-, or 19-ton UF6 cylinders. Most of the UF6 cylinders contain DUF6 (tails). However, clean empty cylinders; normal feed cylinders; cylinders with depleted, normal feed or enriched heels; cylinders with product material >0.711 weight % 235U but ≤ 5.25 weight % 235U; or waste materials from cylinder surveillance and maintenance activities may also be stored in these cylinder storage yards.

Additionally, depleted uranium oxide in modified cylinders or drums from the DUF6 Conversion Facility may be stored in the cylinder storage yards. Refer to the CID for the numbers and types of cylinders in inventory. (Note: the CID does not include oxide filled cylinders; however, the Contractor shall be responsible for oxide filled cylinder S&M).

The cylinder yards do not include the cylinder staging areas adjacent to the DUF6 conversion building.

C.8 RELATED SERVICES (WBS element PA/PO1000)

Services pursuant to Section C.8 shall only be performed at the direction of the CO. Following CO direction, the Contractor shall propose a scope, schedule and price for the work to be performed, which shall be negotiated with the CO. The Contractor shall perform the work upon receipt of written acceptance of the Contractor's proposal.

In addition to the services specifically described in other provisions of this Performance Work Statement (PWS), the Contractor shall perform services as DOE and the Contractor shall agree in writing that will be performed from time to time under this Contract at Paducah or Portsmouth, or elsewhere, as follows:

C.8.1 Services incidental or related to the services described in other provisions of this PWS; and

C.8.2 Services using existing or enhanced facilities and capabilities for the NRC under agency agreements between NRC and DOE.

C.8.3 The Contractor shall:

- (a) Participate in the negotiation of a Delivery Point for DUF6 cylinders (referred to as DU Cylinders in the DOE/EN agreement), DUF6 Residual Tails cylinders (referred to as Residual Tails in the DOE/EN agreement and listed in Attachment A of the agreement) and EN's low enriched uranium (referred to as EN's LEU in the DOE/EN agreement.)
- (b) Provide selected DUF6 cylinders (DU Cylinders) for re-enrichment to Energy Northwest (EN) or its designee (United States Enrichment Corporation, Inc. (USEC)) at the Paducah Gaseous Diffusion Plant (Attachment A list) and the associated applicable Nuclear Materials Transaction Report, DOEINRC Form 741, with each delivery of cylinders.
- (c) Make the electronic records concerning all the selected DUF6 cylinders (DU Cylinders) from Attachment A available for inspection immediately. Those records shall include at a minimum:
 - i. A cylinder history card for each cylinder, if requested by EN or its designee and if available,
 - ii. Authorization for EN or its designee to have access to the Nuclear Material Control and Accountability records for such cylinders and the DUF6 they contain, and;
 - iii. All available information about the source of the DUF6 contained in the cylinders.
- (d) Support inspection of cylinders, rejection and replacement of DUF6 cylinders, to include exchange of a Replacement Cylinder for a Rejected Cylinder at the negotiated Delivery Point. All Replacement Cylinders will have the associated applicable Nuclear Materials Transaction Report, DOEINRC Form 741, with each delivery of the Replacement cylinder as well as the electronic records as outlined in paragraph (d) of this clause.

- (c) Accept DUF6 Residual Tails cylinders from EN or its designee following re-enrichment for conversion and disposition. No empty or heel cylinders will be accepted from EN or its designee.
- (d) Participate in the negotiations of a detailed acceptance schedule for the return of the DUF6 Residual Tail cylinders with EN and its designee.
- (e) Accept and store EN's LEU resulting from the re-enrichment. This includes, to the extent current capability exists, weighing the 30B ANSI-compliant cylinders.
- (f) Assist delivery of EN's LEU to EN's designee as follows:
 - i. Delivery of EN's LEU to a point within the DOE cylinder yard wherein DOE is storing EN's LEU,
 - ii. Participate in the negotiation of a specific delivery schedule for EN's LEU to its designee,
 - iii. Place EN's LEU in EN's or its designee's provided overpacks; and
 - iv. Load EN's or its designee's overpacks with cylinders on vehicles provided for transport.
- (g) All costs associated with the particular portion of the statement of work will be segregated so that the Contractor or DOE can prepare and document a separate voucher/invoice which can be used for reimbursement of DOE/the Contractor by EN.
- (h) Support actions as needed in the event that the DOE/EN agreement is terminated. Termination provisions which may affect Contractor actions are as follows:
 - ii. Accept EN's or its designee's return of any Rejected, Replacement or Unprocessed Cylinders, within 90 days of the termination of the DOE/EN agreement
 - ii. Participate in the negotiation of a schedule for the removal of EN's LEU from DOE's cylinder yard under the written plan

C.8.4 The Contractor shall, when directed by the Contracting Officer, transfer and secure selected cylinders from Paducah cylinder storage yards into Government-provided cylinder overpacks located on separately provided trucks for shipment off-site. The Contractor is not responsible for the transportation of the loaded cylinder overpacks off-site.

C.8.5 The Contractor shall perform the following activities relating to the return of cylinders:

Cylinder Model 30B: Accept up to one thousand (1,000) 30B cylinders after the return of the GDP, subject to the following conditions:

- Of the population of empty 30B cylinders currently stored at PGDP, at least 186 will have hydrostatic testing valid until after October 1, 2015 and of these, at least 82 will have hydrostatic testing valid until after October 1, 2016.
- USEC will ensure that at least an additional 220 of the empty 30B cylinders to be returned by the end of April 2015 and all will have hydrostatic testing valid through October 1, 2015, with 147 of these having hydrostatic testing valid until after October 1, 2016.
- The minimum of 406 cylinders discussed above shall meet the following criteria prior to acceptance:
 - Each of these cylinders shall have a certification (including current ASME Code type hydrostatic strength test and an air leak test).

- Each cylinder shall have been inspected by a Certified Individual (must hold a Certificate of Authorization and have passed the National Board examination sponsored by National Board of Boiler and Pressure Vessel Inspectors) and meet ANSI N14.1, "American National Standard for Nuclear Materials - Uranium Hexafluoride – Packaging for Transport".
- Cylinders found to have leaks, excessive corrosion, cracks, bulges, dents, gouges, defective valves, damaged stiffing rings or skirts or other condition which, in the judgment of DOE or DOE's Contractor render them unsafe or unserviceable, shall be rejected.
- USEC shall have the right to replace cylinders from the onsite inventory of cylinders to be washed/re-hydro-tested and returned without counting against the total returns of 1,000.
- No 30B cylinders shall be accepted by DOE after October 31, 2019.
- Any 30B cylinders arriving at the Paducah site after October 1, 2014 shall be washed unless it is part of the minimum 406 30B cylinders discussed above. Before DOE's acceptance, USEC shall inspect and accept the cylinders against the wash requirements identified below upon return to the PGDP. "Washed" cylinders shall meet the requirements of ANSI N14.1 "American National Standard for Nuclear Materials - Uranium Hexafluoride - Packaging for Transport," Appendix B "Method for Large Cylinder Decontamination for Residual UF6 Greater than 1.0wt% 235U." Washed cylinders may be plugged in lieu of having a valve re-installed.